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ABSTRACT

An experimental program improved students' self-concept and broke their failure cycle. Ss were 19 second through fifth grade students who were distractable and had various individual learning and/or behavior problems. For 1 year, they left their regular classrooms to spend 2 hours daily with a special education teacher. Individually designed educational programs were highly structured and emphasized both social and academic success, which students were not accustomed to achieving. Students were provided with success experiences in social, motor, academic, and perceptual areas. They charted their own successes and were rewarded for growth. Pre- and post-tests measured academic performance (math, spelling, reading, writing skills) and self concept. Additional data included personal behavior graphs, work samples, videotapes, and behavioral checklists. Ss made significant gains in all academic areas tested, and competencies in social interaction improved more than could be attributed to maturity alone. Self-portraits showed that all students felt they had improved both academically and in social interaction. Heterogeneous grouping of students demanded only one special teacher and was considered economically efficient. (KW)

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ACHIEVEMENT UNLIMITED:
Enhancing Self-Concept Through Improvement of Academic, Motor, and Social Skills

EC 050 163 E

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P. K. YONGE
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COLLEGE OF EDUCATION
UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

Achievement Unlimited:

Enhancing Self-Concept Through Improvement of Academic, Motor and Social Skills

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July, 1972

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And finally, to the students, each one uniquely individual.

Preface

It is a sad commentary on our educational system and on our society in general that so many children get caught up in a vicious failure cycle. As they fail to meet expected social and academic norms, they begin to perceive themselves as failures. This perception is shared by their teachers, their families, and their peers. Such self concept and the environmental conditions produced as the failure label becomes fixed breed additional failure experiences which, in turn, drive the perception deeper. The problem is accentuated when a genetic, psychological, physical, or mental handicap is present.

The experimental program described in this monograph attacks the problem of the failure cycle. Nineteen children identified by their teachers as having serious social and/or academic problems are the subjects. For a year they left their regular classrooms periodically to participate in individually tailored educational programs which were highly structured to emphasize academic and social success. The subjects charted their own successes and were rewarded for their growth.

The data reported in the monograph show that by the end of the year, highly significant social and academic growth had occurred. It is our hope that others will be stimulated by this report to conduct similar programs in their schools.

J. B. Hodges, Director
P.K. Yonge Laboratory School
and Professor of Education

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ACHIEVEMENT UNLIMITED:
ENHANCING SELF-CONCEPT THROUGH IMPROVEMENT OF
ACADEMIC, MOTOR, AND SOCIAL SKILLS

Description of the Study

Need For Investigation:

The school has not fulfilled its responsibility to society and to its students, including those defined as "exceptional", until it has helped each student to accept himself as he is, to view both his assets and limitations realistically, to strive for goals that are attainable, to develop independence in thought and action, and to find a place for himself among his peers. Neither has the school accomplished its purpose until it has assisted those with whom the child associates--his classmates, parents, neighbors, and teachers--to accept him as a worthy individual and to see beyond his defect or difference to the person who is there.

The Program:

At P.K. Yonge Laboratory School, a program entitled Achievement Unlimited has been designed to meet the above goals with "special education" students. On the basis of a pilot project beginning during the summer of 1970, the experimental program was developed. Implementation and evaluation took place during the 1971-1972 school session. Achievement Unlimited supplemented the existing curricular activities and sought to modify social and academic behaviors of students who had previously experienced an extreme lack of success in school--students who in many other settings would be classified according to their exceptionality or handicap and placed in special education classes on the basis of their disabilities.

The program was planned and directed by the special education teacher who

was also responsible for diagnostic and prescriptive procedures. Upper elementary, junior high, and high school students assisted in the implementation of the program. In addition, each quarter one student teacher from the special education department of the University of Florida participated and assisted in the implementation of the program. No additional staff members were required.

Design:

The design utilizes aspects of a variety of currently operative educational approaches including the extremes of humanistic or perceptual psychology and techniques for modifying specific behaviors by structuring the students' educational experiences. Basically, Achievement Unlimited was designed to modify behavior by structuring the educational experiences without sacrificing humanistic goals. Each student was provided with small "bits" of success in skill development; i.e., social, motor, academic, and perceptual. The goal of assisting students to develop specific adaptive skills for coping with the educational and social environment was achieved through assignment of suitable tasks, provision for meaningful learner rewards, and maintenance of an appropriate degree of teacher structure. Manipulation of the three sides of the learning triangle--task, reward, and structure--with the student at its center was extremely important to each successful program of remediation. Based on the premise that pupils and teachers are motivated by concrete evidence of change, emphasis was placed on positive performance in all areas. Pre- and post-testing of all students were completed in the academic areas of math, spelling, reading, and writing skills. Pre and post measures of self concept included the Florida Key Inferred Learner Self-Concept Rating Scale, the Ottawa School Behavior Checklist, and the Goodenough Measurement of Intelligence By Drawing. Personal graphs to show daily progress in academic and social

LEARNING TRIANGLE

behaviors were maintained for each student. Additional data collected were informal self-concept scales, work samples, video-tapes, behavioral checklists, and test performance. In order to provide a concrete record of the progress of each student, graphs were kept for a minimum of three academic and one social behavior. All students understood their individual graphs and participated, to whatever degree possible, in recording daily progress. Some students accepted the entire responsibility for keeping their own graphs.

With each student working at his own level in using materials selected or designed for him, the program attempted to create an environment of success by developing skills in attending, responding, following directions, exploring, socializing, motor development, perception, and in academic areas. Once this foundation was firmly established, readiness to return to the regular classroom was considered. The opinions of both the student and his classroom teacher were important in this decision process.

Students:

The students for whom this program was designed were those who required structured, sequenced activities and who were highly distractable, especially by noise and/or movement. Nineteen students in grades two through five were selected for the program by the special education teacher. Selection was based on her observations plus observations and recommendations by classroom teachers, guidance counselors, and the school nurse. None of the nineteen selected were experiencing a satisfactory level of success in the regular classroom settings because of various individual learning and/or behavior problems. The students were not, however, identified or labeled on the basis of a particular problem or handicap.

Included in the group were thirteen males and six females, seven being black and twelve white. No single socio-economic group was predominant. Two

students were in wheelchairs because of cerebral palsy and one was receiving medication several times daily for epilepsy. One student had a chronic problem of fluid in her inner ear, resulting in hearing difficulties. Two students were seeing psychiatrists. Two others had been referred for psychiatric evaluation. Fourteen of the nineteen had previously had frequent contact with the guidance department and eleven had frequented the nurse's office with physical complaints. Intelligence quotients derived from previous testing ranged from 57 to 116. Each knew that he was part of an experimental program, knew why he was chosen, and had some degree of understanding relative to the goals.

The nineteen students met daily for a minumum of two hours in this "block" of time alloted in order to provide opportunities for them to learn to participate as group members as well as individuals. Each student returned to his regular classroom for the remainder of the school day following participation in Achievement Unlimited.

Objectives:

Specific objectives for the students were as follows:

1. To provide each with an opportunity to upgrade needed academic skills and to capitalize on those skills in which he was already proficient;

2. To facilitate improvement in competencies in social interaction, particularly the ability to relate to and communicate with others;

3. To assist each in assumming a greater degree of responsibility for his own behavior in both academic and social areas;

4. To facilitate the enhancement of the self-concept of each;

5. To enable the student to be a contributing, valued member of a heterogeneous group with the first evidence being acceptable participation in his regular classroom.

Implementation:

As an initial step, academic and/or social behaviors which needed to be modified were pinpointed by the teacher and student. Appropriate tasks, designed to achieve modification of each pinpointed behavior, were then developed by the teacher. Data were systematically collected relative to the student's response to each task. No one set of curriculum materials was utilized nor was any particular curriculum theory promoted. A list of the materials available to students during the program is included in the appendices. Work tasks were selected for each student based on the special education teacher's educational evaluation of the student. Information relative to academic and physical performance as well as social interaction skills were included in each evaluation.

The work tasks were sequenced based on Premak's principle. This principle indicates that behavior which normally occurs at a low rate; i.e., arithmetic problems correctly completed, can be accelerated if it is followed by activities which are highly desirable to the student; i.e., art or five minutes of free time. Any student who had extreme difficulty "getting started" each day had his tasks sequenced so that his first task was the one that he most enjoyed. Each student who found it difficult to complete his task sheet had his favorite activity at the end of his list. Task sheets (See Appendix B) were designed so each student could see exactly what and how much was expected of him during the work period. Furthermore, tasks were so designed and materials were so arranged that students could begin each task without teacher direction.

Tasks were constructed so that each student could achieve at least an eighty-five to ninty-five percent level of success in terms of correct responses. Educational activities were presented to each student at his unique level of competence rather than at his frustration level. Challenge was viewed as

conducive to learning, but "threat of failure" was not. Thus, the individual components of a more complex task were consistently presented for mastery prior to presentation of the whole task. For example, proficiency in visual memory, exemplified by correct responses in sequencing letters, preceded the task of spelling five words from recall. Similarly, correct sequencing of words preceded sentence writing and tracing preceded copying.

As each student completed a task, it was checked and the student was given immediate feedback. Only correct responses were marked and the student continued working on each task until it was correctly completed. The day's performance in each skill area was plotted on the appropriate academic graph for each student.

Positive reinforcement was also given to students for appropriate social interaction or social behavior. Points were given at irregular intervals throughout the morning to reward appropriate behavior for each student. "Appropriate behavior" simply meant doing whatever a student should be doing whether walking to get materials, working at his assigned place, or spending earned "choice time".

Points for appropriate behavior were recorded on individual point sheets (See Appendix C) which were kept in each student's task booklet. These booklets were not shared with the total group. The total number of work points earned for appropriate behavior during work periods was the criteria for "choice time". Thirteen points could be earned throughout the work period with a minimum of ten required in order for a student to receive "choice time". However, when a student correctly completed all of the tasks on his daily task sheet, he was entitled to "choice time" for the remainder of the class period no matter how few work points were earned. In this way students were rewarded for correctly completing their work and for constant effort during work periods.

Figure 1 and Figure II represent procedures followed for classroom activities.

FIGURE I

FLOW CHART REPRESENTING HOW A STUDENT MOVES THROUGH WORK PERIODS

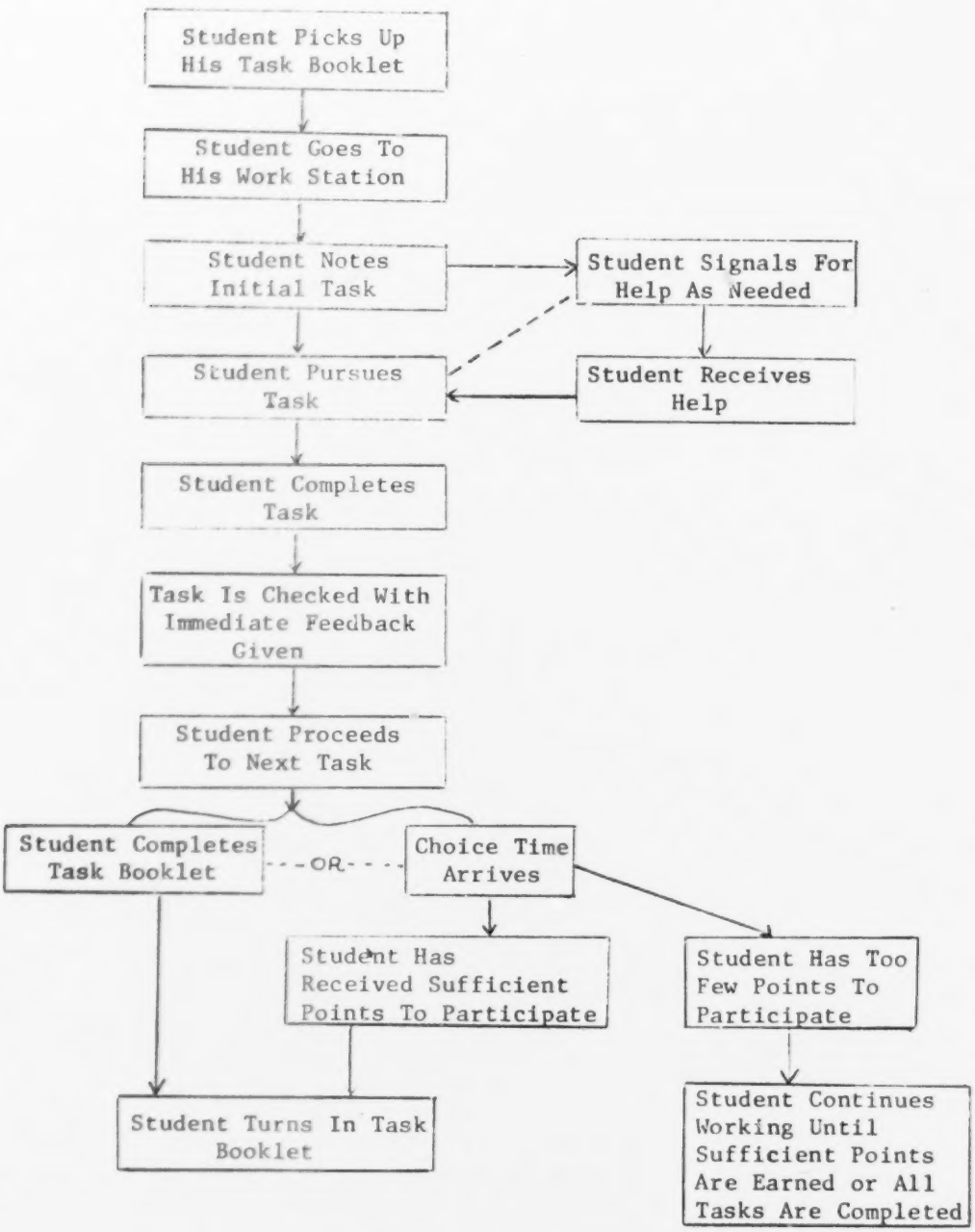
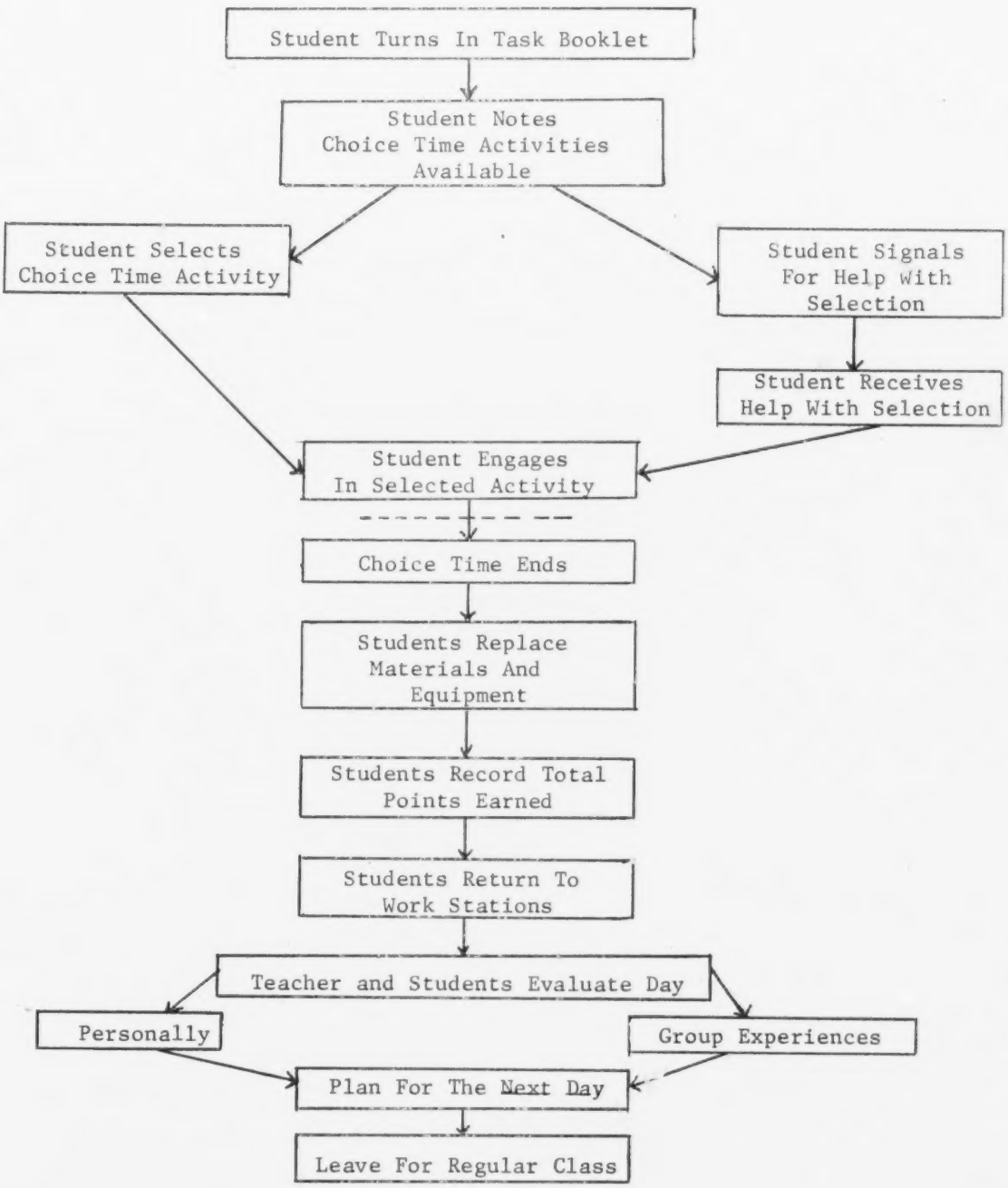
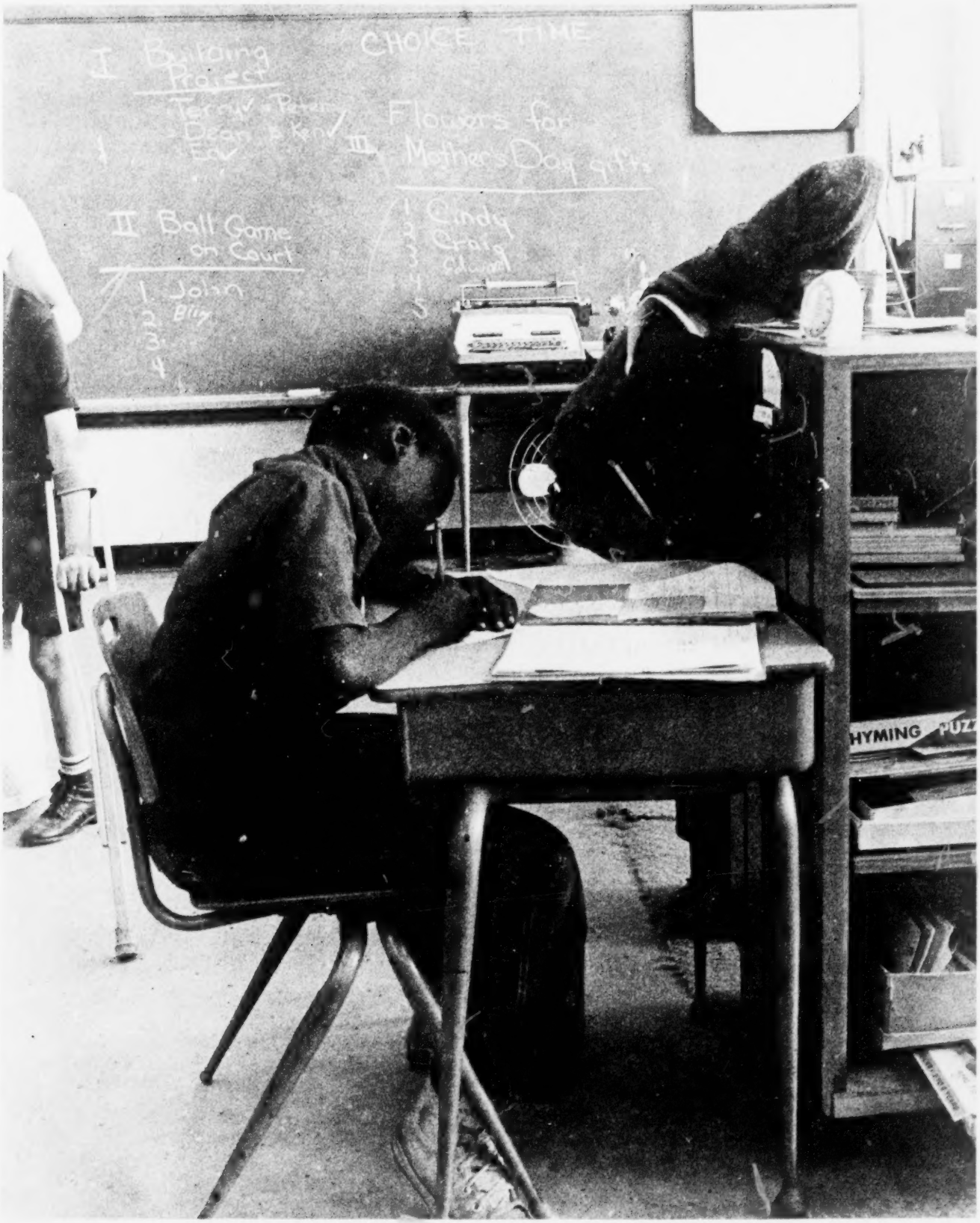

Student Picks Up His Task Booklet
Student Goes To His Work Station
Student Notes Initial Task
Student Signals For Help As Needed
Student Pursues Task
Student Receives Help
Student Completes Task
Task Is Checked With Immediate Feedback Given
Student Proceeds To Next Task
Student Completes Task Booklet
---OR---
Choice Time Arrives
Student Has Received Sufficient Points To Participate
Student Has Too Few Points To Participate
Student Turns In Task Booklet
Student Continues Working Until Sufficient Points Are Earned or All Tasks Are Completed

FIGURE II

FLOW CHART REPRESENTING THE PROCEDURE FOLLOWED BY EACH STUDENT AFTER EARNING CHOICE TIME


Student Turns In Task Booklet
Student Notes Choice Time Activities Available
Student Selects Choice Time Activity
Student Signals For Help With Selection
Student Receives Help With Selection
Student Engages In Selected Activity
Choice Time Ends
Students Replace Materials And Equipment
Students Record Total Points Earned
Students Return To Work Stations
Teacher and Students Evaluate Day
Personally
Group Experiences
Plan For The Next Day
Leave For Regular Class


CHOICE TIME
I Building Project
II Ball Game on Court
III Flowers for Mother's Day gifts
1 John
Billy
1 Cindy
HYMING

"Choice time" was the term used to refer to a period of time during which the student could engage in any activity he had selected from a lengthy list of acceptable activities. A wide range of activities were available. These included sitting by the creek to sketch, eating an apple, playing a game alone or with others, playing inside or on the playground, having time alone with a teacher, searching for insects, or building a terrarium. Any activity that could take place on the school campus without disturbing others could be considered.

In the classroom only two unalterable rules were set by the teacher. They were as follows:

1. We all have the right to live and do what we think is best without being afraid. Therefore, no one ever has the right to hurt another person intentionally in any way by deed or word at any time.

2. We all have the right to learn and to share what we know with others who want to learn. Thus, no one has the right to keep another from learning or teaching.

All other policies and decisions were made and modified during the year by the students themselves as they saw the need. Generally, the students extended the first rule to include not hurting any living thing.

A student did have a choice to sit and do "nothing constructive" as long as he neither hurt nor disturbed others. He was only rewarded, however, when he did achieve something. Students were encouraged to exhibit appropriate behavior, including academic work, by receiving points, recognition, and "choice time". Each student also had the alternative to decide what he needed to work on and to prepare his own task sheet for any given day and to submit it for teacher approval. If approved, the task sheet was signed by both student and teacher and regarded as a "work contract".

General point sheets (See Appendix D) for each student were posted in the

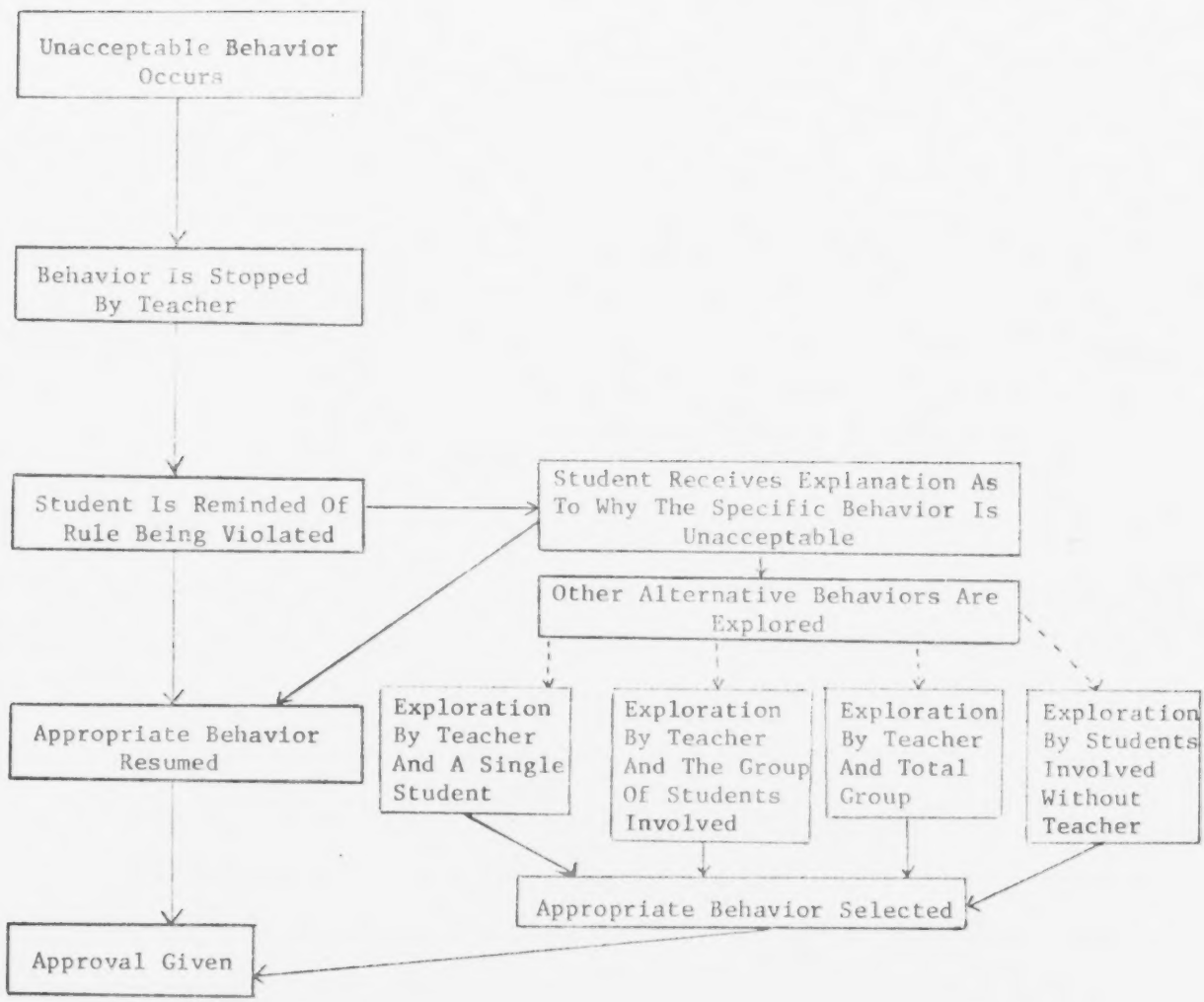
classroom. These were used for recording points for the following: 1) being ready to work on time (five points); 2) having the necessary work tools; i.e., pencils, braces, walkers, wheelchairs, and anything needed by a student in order for him to work (two points); 3) signing in on the attendance sheet (one point); 4) completing the classroom job he selected (two points); 5) achieving the individual personal behavior goal selected (five points); and 6) the total number he received daily for working (up to 13 points). Points sheets served as one means for each student to see for himself and to show others the general progress he was making in all areas. It also made it easier to begin a day with positive attitudes and allowed a child to earn eight points for simply "starting out right". The assumption was that success generates additional effort and, consequently, additional success. Major effort was directed toward helping each student begin each day by seeing himself in a positive manner.

Every effort was made to ignore negative or unacceptable behavior. Students seeking attention in inappropriate ways were not rewarded nor was time taken away from others who were earning attention appropriately. Unless the behavior was dangerous or seriously disrupted the learning situation, it was ignored. When misbehavior was so serious that it could not be ignored, the child was told why it was not acceptable. Furthermore, he was reminded of the rule being violated and more appropriate, alternative behaviors were discussed. As soon as acceptable behavior was resumed, praise was given. Thus, teacher disapproval was used only to <u>stop</u> the inappropriate behavior, not to punish it. Figure III depicts this process.

"Right," "wrong," "good," and "bad" were terms never applied to students' academic or social behaviors. Each student was viewed as a worthwhile individual having both assets and limitations and possessing alternative means of

FIGURE III

FLOW CHART REPRESENTING PROCEDURE FOR HANDLING
UNACCEPTABLE BEHAVIOR


Unacceptable Behavior Occurs
Behavior Is Stopped By Teacher
Student Is Reminded Of Rule Being Violated
Student Receives Explanation As To Why The Specific Behavior Is Unacceptable
Other Alternative Behaviors Are Explored
Appropriate Behavior Resumed
Exploration By Teacher And A Single Student
Exploration By Teacher And The Group Of Students Involved
Exploration By Teacher And Total Group
Exploration By Students Involved Without Teacher
Appropriate Behavior Selected
Approval Given

behavior in each situation. The responses and behavior of students were dealt with as correct or incorrect, acceptable or unacceptable, and appropriate or inappropriate. Incorrect responses in academic work were simply corrected by the student with whatever help was necessary. When unacceptable behavior or poor judgement relative to social behavior occurred and resulted in a conflict situation among students, more appropriate alternatives and their probable consequences were explored with the students involved. The explorations included one-to-one discussions with the teacher, small and large group discussions lead by the teacher, or private discussions among the students involved. In these discussions the individuals sought a solution that was to be eventually shared with the teacher. Certainly, the third technique of exploring alternatives reflected the greatest competencies in social interaction and was employed by the teacher whenever feasible.

Formal Testing:

The Ottowa School Behavior Checklist was initially used for recording teachers' observations of specific social behaviors exhibited by the participating students. Using the list of 100 items as a guide, one specific behavior which the student desired to change was selected and recorded. At the beginning of each day, the student was given the card on which his goal was written. If he retained his card throughout the block of time each day, he received five points. These points were noted on his general point sheet. He could lose the five points and his card only if he exhibited the negative behavior specified on the card under his goal. At that time the teacher would take the card and keep it for the remainder of the class period.

The following are examples of goals with specific negative behavior prepared by students:

Goal: Being considerate of others and respecting their

right for quiet during work periods by not disturbing them. My card may be taken if I disturb others during work periods by drumming on my desk with any objects such as rulers and pencils.

Goal: Becoming a better listener.
My card may be taken it a teacher has to tell me something more than one time.

The behaviors selected by the students were most commonly the ones that consistently caused them to "get into trouble" in the regular classroom setting. The degree to which modification or extinction of negative behaviors transferred from the experimental group setting to other settings was also noted. Every effort was made to transfer techniques that were effective with students to their regular classrooms and to other situations. A general change or lack of change in the 100 specific behaviors was indicated by the Ottowa School Behavior Checklist. Impartial judges with experience in observation were used for both the pre and post recordings. Those recording were interns completing their graduate programs in Special Education for Emotionally Disturbed Children. A positive change, reduction of negative behaviors, suggested an improved self-concept and an increased feeling of self-worth.

Goodenough's rating scale, Measurement of Intelligence By Drawing, was used to evaluate self-portraits done by each student during pre- and post-testing. In addition to an increase in the total points scored, positive changes in self-awareness and improved feelings regarding their appearance were considered to reflect important growth and to be related to the individual's total self-concept.

The Florida Key Inferred Learner Self-Concept Rating Scale was also used, but the differences in scores cannot be considered as a valid indication of

change in self-concept because the raters as well as the settings for observations changed from pre to post recordings. The regular classroom teacher rated the student based on regular classroom performance in September while the special education teacher rated the student in the experimental setting during the month of June.

Video-taping:

Video-taping was done every sixth day to provide additional data for evaluating changed in student behavior, teacher-pupil and pupil-pupil interaction as well as the program's general effectiveness. The video-tape was frequently viewed by the students and was included as data available to the students, parents, teachers, administrators, and resource personnel involved with any participating student.

Attitude Measures:

Attitudes and feelings of the students, their parents and teachers were noted throughout the program. Most of the data relative to the parents and teachers were recorded through antecdotal records of candid comments and reactions. The students, however, were given carefully constructed evaluation questionaires at the end of the program in addition to written and verbal reactions throughout the program.

Student Helpers:

Student helpers were extensively utilized in the program throughout the year. Older interested students (ages 12-17) were assigned to work on a regular basis. They assisted the teacher and younger students as a part of their school program. The student helpers were not necessarily academically successful nor were they independent learners. They had two main functions: 1) to help the younger students in ways such as calling out spelling words,

reading directions, and answering questions; and 2) to provide clerical assistance such as totalling points and maintaining graphs. Students within the group of nineteen were also assigned to help one another whenever appropriate.

Data, primarily of antecdotal records and responses to questions, were collected to evaluate the effect of assisting in the program on the self-concept of the helpers as well as the learners in the study. Data also were examined to determine what effect, if any, this helping relationship had on the academic performances of both helpers and learners.

The Results

Academic Behavior:

Statistically significant gains were made by the group in all academic areas included in pre- and post-testing. (See Figure IV.) The first academic skill test simply required the students to write the letters of the alphabet in order from recall. All nineteen students participated. The two students handicapped by inadequate coordination because of cerebral palsy had a choice between trying to write with a large pencil or using the adapted typewriter. One used only the typewriter. The other both typed and wrote the letters. Results in September ranged from one letter correct to 26 letters correct. The eight students who wrote all 26 letters correctly on the pre-test were not included in the statistical analysis of the total group. In June one student wrote 24 letters correctly, two wrote 25 correctly, and the remaining seventeen students wrote all 26 letters correctly. According to the t-test, gains of the group were statistically significant at the .05 level. The results are reported in graph form in Figure V.

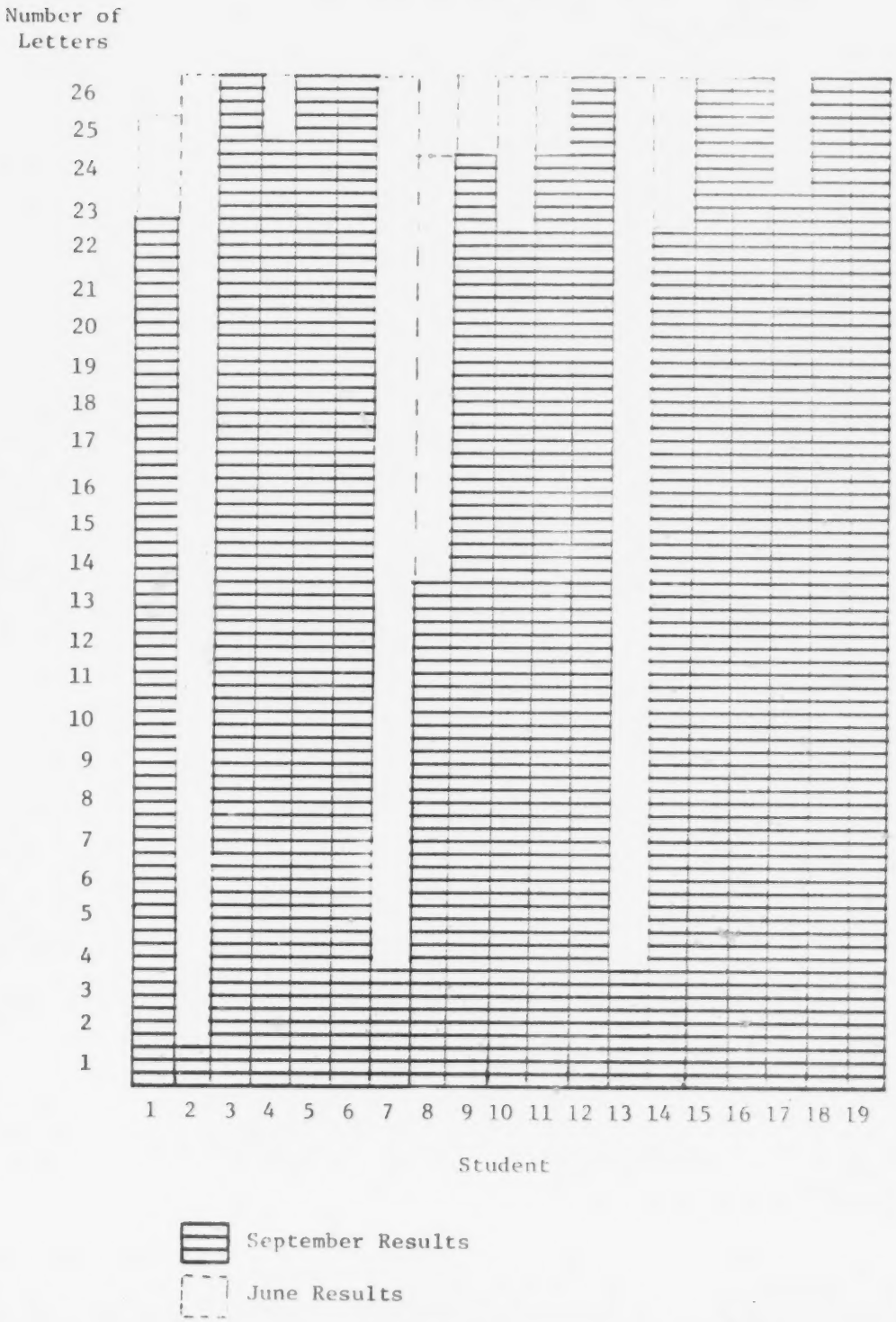
In testing letter formation skills for writing, the students were to write from recall all four forms of the letters as they were called out by the teacher. This required satisfactory reception through the auditory

Figure IV Statistical Summary of the Difference Between Pre and Post Scores on Academic Tests

Test:	Number	X	X^2	average gain X	t	Significance
Alphabet	11	81	1341	7.36	2.83	.05
Cursive: from visual stimulus	17	219	3399	12.8824	8.8390	.001
Letter Formation: from auditory stimulus						
Printing: Lower case	19	170	2260	8.947	6.0868	.001
Printing: Upper case	19	212	3516	11.1579	6.0833	.001
Cursive: Lower case	17	194	2774	11.4118	7.9525	.001
Cursive: Upper case	17	103	1221	6.0589	4.0911	.001
Spelling:	19	683	34,555	35.9474	4.2427	.001
Reading Vocabulary:	19	728	36,504	38.3158	7.6364	.001
Reading Level:	19	109	997	5.7369	5.5031	.001
Math:	19	2177	290439	114.58	10.46	.001

Figure V

Comparison for Individual Pre and Post Scores
for the Number of the Letters of the Alphabet
Written In the Correct Order



channel. The order was not alphabetical. Statistical analysis was done for each of the forms with all nineteen students included in testing lower case printing and upper case printing. Only seventeen were tested for skill in forming lower case and upper case cursive letters because it was considered unrealistic for the students with cerebral palsy to attempt the task. According to the t-test, the improvement of the group in all four forms was statistically significant at the .001 level.

A third test required the student to write only the lower case cursive letters beside the printed lower case letters randomly ordered. Satisfactory visual reception was thus required.

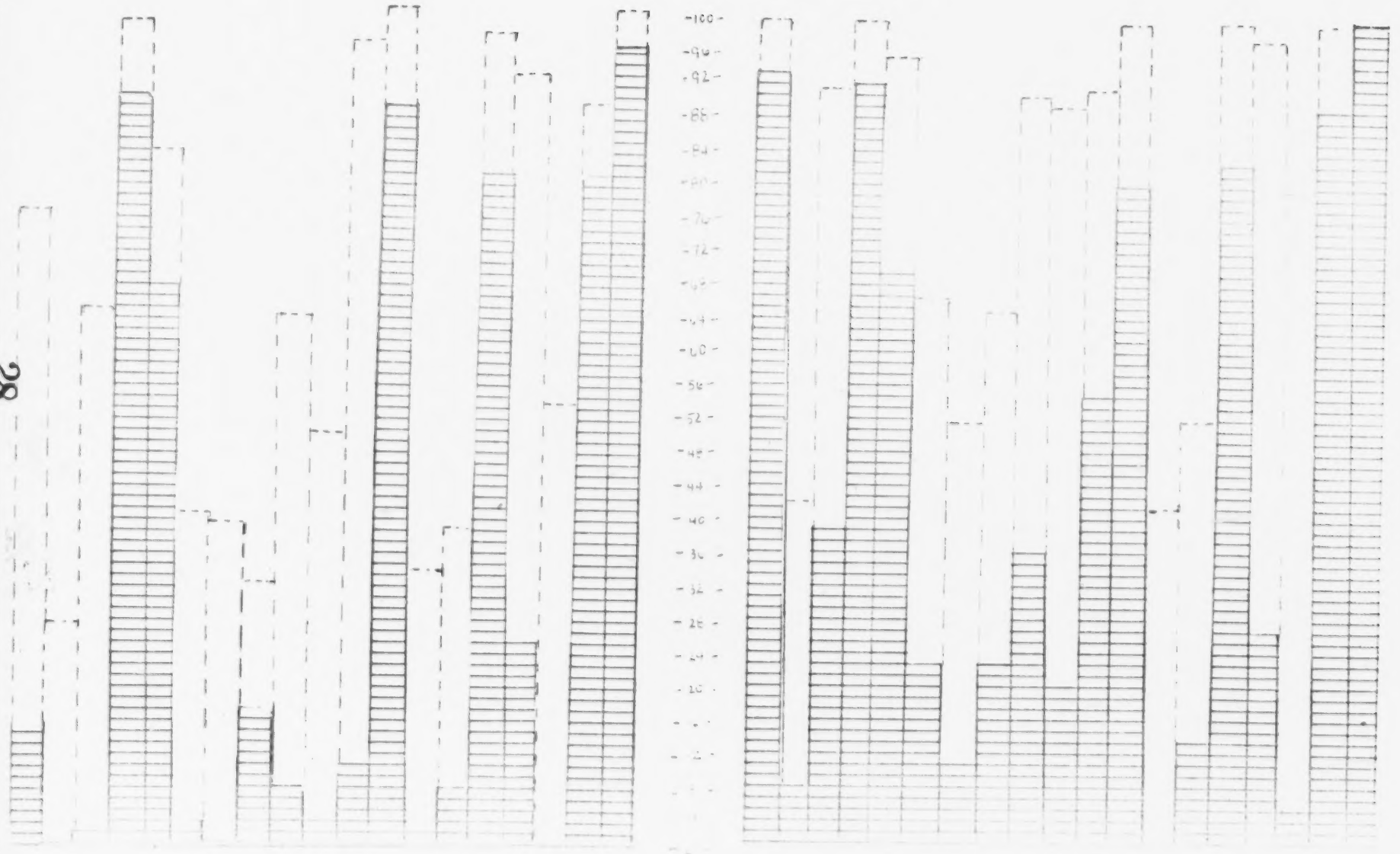
Because the writing tests required satisfactory reception through two separate channels, auditory and visual, it was possible to compare each student's visual receptive skills with his auditory receptive skills. September testing results ranged from zero to nineteen with only three scores above nine. June scores ranged from five to 26 correct with only three scores below ten. The gaines were statistically significant at the .001 level as compared by t-test procedures.

For both spelling and reading vocabulary, the Dolch List: 100 Words Most Commonly Used in Story Telling was presented. September spelling scores ranged from zero to 95 correct and reading scores ranged from zero to 99. Post-test scores in June ranged from 31 to 100 for spelling and 41 to 100 for reading. Changes in scores for both tests were also significant at the .001 level on t-tests. The results of both the spelling and reading tests are presented in graph form in Figure VI.

Reading level was determined by achievement on the placement test for the McGraw-Hill Sullivan Programmed Readers. The level was indicated by the number of the last test on which the student correctly answered four of the six items on pre and post measures. Because the pre-reading test preceeded test

Comparison of Individual Scores on Pre and Post
Spelling Tests of 100 Basic Words

Comparison of Individual Scores on Pre and Post
Reading Tests of 100 Vocabulary Words



September Score

June Score

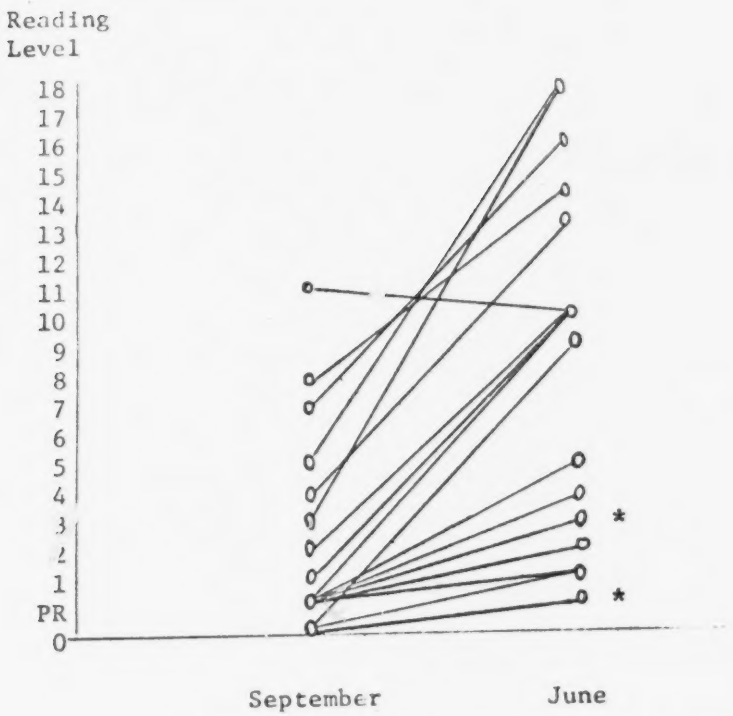
Figure II

number one, a student who failed to answer correctly any items during pre-testing and who correctly answered four of six items at level one during post-testing gained two levels. One student who simply quit responding, even though she made no errors, completed only levels one through ten in June after completing through level eleven in September. Thus, she appeared to have lost one level over the year. Other differences ranged from a gain of one level to a gain of five levels. Seven students gained nine or more levels with differences for the total group significant at the .001 level. Figure VII shows the results in graph form.

In math students were giver a skills test constructed by the project director in 1965. The test had a total of 521 items ranging from tracing numbers to word problems requiring competency in division of fractions. Generally, three items were presented for each specific skills; i.e., addition of sets of two digit numbers requiring carrying. Students were to complete all items they could. They could omit some of the more difficult items in addition and complete some parts of the subtraction test. Items requiring reading were included in the test in such a way that it was possible to determine whether an error was computational or a result of a deficit in reading skills. In September the number of items correctly answered ranged from ten to 323 with difficulties for some beginning in tracing and writing numbers. For others competencies extended to subtraction with borrowing. For the month of June, the smallest number of items correctly answered was 106. This indicated difficulty in subtraction. One student correctly answered 445 items despite exhibiting some difficulty in division. Another student correctly answered 384 items, resulting in a gain of 113 points over his pre-testing scores despite not being able to demonstrate fully his computational skills and understanding of math because of a broken arm. Dictating answers in multiplication of numbers with two and three digits became too frustrating for him to continue to

FIGURE VII

PRE AND POST READING LEVELS ATTAINED
ON THE SULLIVAN PROGRAMMED READING TEST



* Data represents two students

reach the ultimate ceiling for that test. As a group the difference between pre and post scores was statistically significant at the .001 level. Figure VIII depicts the results graphically.

Areas of concern were not limited only to those included in the testing. Writing experiences were varied and far more extensive than tests of letter formation would indicate. Many word lists, reading materials, and language games were included in development of skills. Academic testing was limited to the seven major areas discussed. Thus, all students could participate in each test, and pre and post measures for everyone in the group could be consistently taken.

Social Interaction:

Competencies in social interaction also improved over the nine month period more than could be attributable to maturity alone. (See Figure IX.) Student behavior changed from physical expression of feelings (primarily hitting and grabbing) to verbal expression. In September students reacted to others spontaneously by threatening, hitting, name calling, or destruction of each others' property. Seemingly, no thought was given to the consequences which might result. Following are examples of typical behaviors observable in September. Some of this behavior had been going on for a year.

"A" always ran home to avoid dealing with any unpleasant situation. He would refuse to return to school on that day. He consistently either failed to report to school at all or was two to three and one-half hours late each morning because of difficulty in sleeping. Medication seemed to cause or intensify feelings of depression. He never expressed any kind of feelings at school nor did he freely express feelings at home.

"B" would "freeze" in a speechless state. She related her conflict, problem, or fear only after she was at home. She became almost hysterical at that

Figure VIII

Comparison of Individual Pre and Post Scores on Math Skills Test

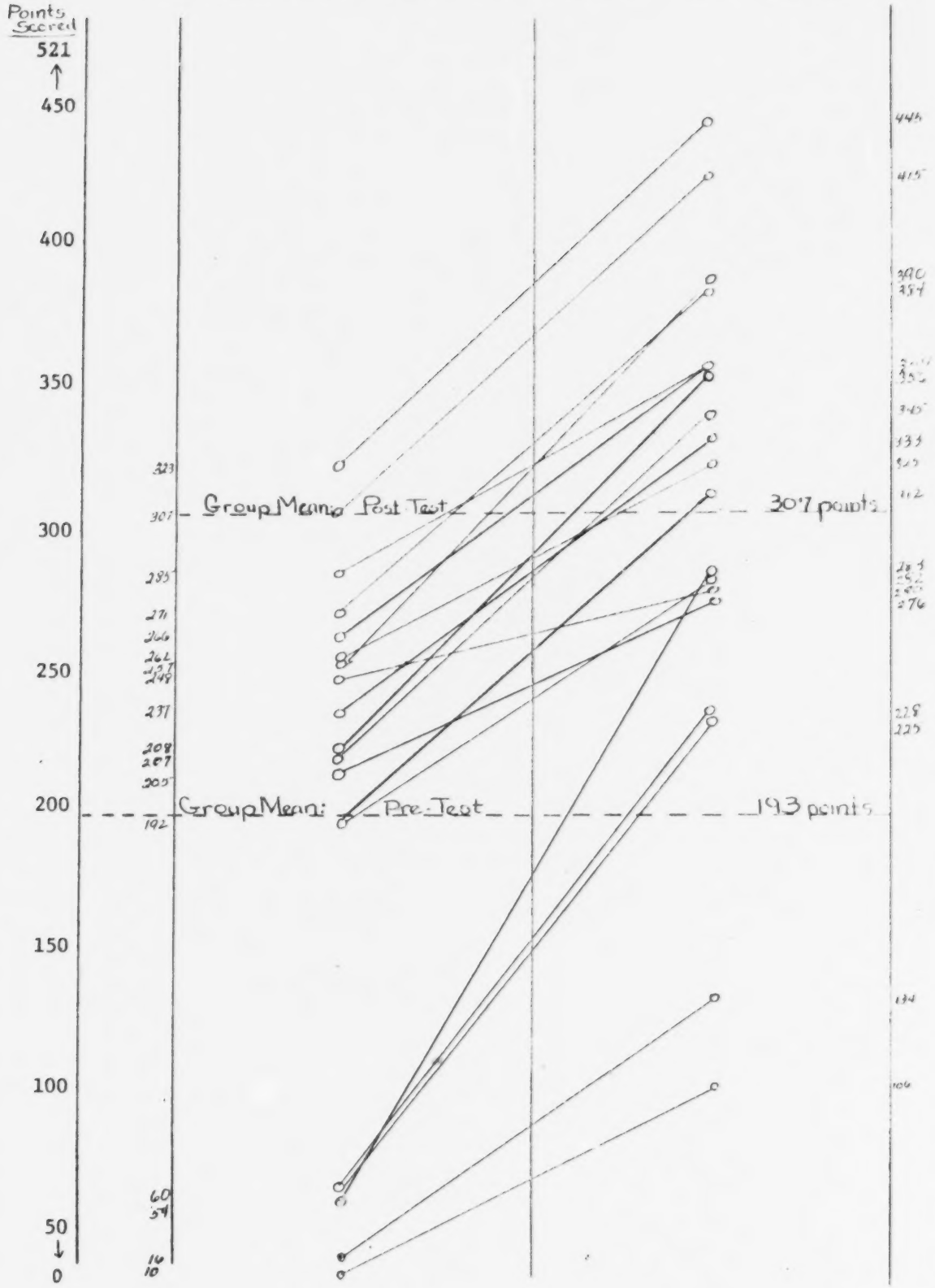


Figure IX Statistical Summary of the Difference Between Pre And Post Tests of Self Concept and Behavior

Test:	Number	X	X^2	X	t	Significance
Florida Key Inferred Self Concept	18	236	6970	13.11	3.684	p .01
Ottowa School Behavior Checklist	19	283	5227	14.8948	5.0346	p .001
Goodenough Draw a Person	11	341	13937	31.0	5.60	p .001

time. This was generally late at night when her mother could not get help or suggestions.

Although he was much smaller than most other students whom he confronted, "C" immediately began to strike and encourage any student who displeased him to fight. He had few problems with adults but would get sick and vomit in new or threatening situations with adults or peers. He seemed unaware of his apprehensiveness and could not discuss it.

"D" would begin crying and irresponsibly swinging his fists when in conflict situations with his peers. After a conflict situation with adults, he would usually begin crying and put his head down for hours. This behavior with adults could result after simply being told he had worked from the wrong page or made an error in his work.

"E" would begin to scream vulgar names and curse as he picked up the nearest object (chair, pole, shovel, stapler, etc.) to destroy his "enemy", adult, student, and/or their property. In a sneaky manner he took what he wanted from others and then took this "prize" home if bartering for it failed. He would frequently take "things" apart just for their components. If he wanted a screw, he didn't care if it came from a junk pile or a 300 dollar machine. He could not express his feelings, particularly those of inadequacy or disappointment.

"F" would threaten any student "crossing" her with her seven siblings and cousins who had acquired a feared reputation for gang beatings after school (although only two or three had actually taken place). She would additionally threaten that things would be worse if the other child reported her threat.

"G" would withdraw, hide, cry, and sulk and would do nothing else for two or three days if displeased. He was unable to express what caused the behavior. Frequently, the cause was not apparant to others.

"H" would let peer crisis pass as if she were unconcerned. However, later in the day, week, or month when she caught the child who had displeased her when he was alone somewhere on the school campus, she would then hit, scratch, kick, and pinch him unmercifully. When questioned, she would deny that anything happened. When she happened to be caught in the act of hurting someone, she justified her behavior while setting herself up as the model student with only feelings of tenderness and love. She would even attack a student she had wanted to help earlier in the day if someone else had gotten to help the student instead of her. If corrected in class by an adult for unacceptable behavior, she would scream and verbally attack the adult. She would yell that she was being "picked on" and would refer only to other students. Thus, any conversation about her actions or her responsibilities was avoided. She frequently threatened that her mother would "get" the adult.

Seven year old "I" would continually hide his face with his shirt collar and hands or stuffed the corners of his collar into his nostrils, his ears, or his eyes. He simply stared with an open mouth when asked a question by adults or students. "I" either hit, pinched, kicked, or grabbed something from a peer when he wanted attention. He would throw his arms around adults he approached and hug them, or stroke their hair. He was particularly attracted to adult females. If corrected by an adult for unacceptable behavior or told "no", he would cry for whatever time was necessary for him to get his way. "I" exhibited little verbal communication at a cognitive level and almost none at an emotional level.

As problems were worked through during the year, students developed the realization that all behavior had a cause and an effect, even though it might not always be understood. Students began to ask "Why?" to others. They sought to understand the reasons for the behavior of their peers. In May observers frequently heard students ask, "Why did you do that?" "Were you trying to

hurt me?" "Why do you think she did that?" "Did you upset her?" "Do you know that makes me angry?" or heard them comment, "I don't like to be around you when you do that." "He told you he was sorry. If you break his, it still won't make yours be fixed." "Let me try to fix it back for you. I'm sorry I knocked it out of your hand. It was an accident." "I think I should only bring half of the money to replace it 'cause I was only half responsible for ruining it. After all, you shouldn't have left it by the sink where water could splash it." "You are not helping us. If you don't stop goofing around, we're gonna ask Mrs. Brown to take you out of our group."

The students began to understand better the behavior of their peers and consequently their own behavior. They began to explore the alternatives available to them when something displeased them and then they began to consider the probable consequences of each alternative. They could verbalize the progression of many problems that arose and see how selecting some alternatives caused additional problems to be added without solving the one they originally had.

In September every student in the group was a "fighter" when the occasion arose. "Flare-ups" decreased from four to six daily during experimental group time in September and October to one every week or two in May and June. The later "flare-ups" were even further limited to only four of the students.

Rather than getting so angry when his task sheet included a task he did not want to do or when he carelessly did the wrong page, "D" would occasionally ask to make his own task sheet for the next day to use as his work contract. As he prepared and then followed his task sheet, he became more aware of the importance of directions. This awareness transferred to the group situation, and he consequently spent considerably less time in an angry, pouting mood over an error and being corrected.

Once "F" realized that her feelings were important to others and became

aware that she could control the feelings and behaviors of others to some extent, she relied upon herself to solve problems independently and no longer needed to threaten others with her family gang.

As social interaction problems were worked on, the group learned that it was "okay" to have feelings of anger and disappointment, but that there were only some acceptable ways of expressing them. Before she was able to express herself openly to relieve emotional tension, "H" had to learn: 1) that another student could remain her friend even after "H" expressed that she was angry with them at the moment, and 2) that a person she wanted to help would probably ask her the next time if she let them know honestly and simply that her feelings were hurt when she was not chosen.

When "I" progressed enough academically to be able to work at his work station for longer than one minute and 37 seconds (as in September), he found that he was rewarded and that the teacher paid attention to him. He also found that he would not receive any attention while he was crying; consequently, he "used" this attention-getting device less and less. As he became more accepted by increasing his appropriate behavior, evidence of increased feelings of self-worth became apparant. There was a drastic decrease in the time spent playing with his shirt and face and an increase in successful academic performance. He began to talk with other students and with adults. He began expressing both positive and negative feelings.

As students gained competencies in social interaction, they used their skills to teach others both within and outside the group. As they saw themselves as teachers and helpers, the degree of responsibility assumed for their own behavior increased. It was not uncommon in May to hear a student say, "I know 'x' will be following what I do this morning, so I'll really have to be careful."

In evaluations of the progress they had made during a given period of time, the students were extremely realistic and could discuss with observers and friends what they were doing and why. The greatest change in realistic self-evaluation was made by a fifth grader who performed at the second grade level in September and rejected all work that could challenge him by stating that, "it was too easy." Even in the library when others were totally unconcerned with him, he would get a book much too difficult for him (even high school level) and sit with it for extensive periods of time under the pretense of studying something far beyond the other third, fourth, and fifth graders in his regular class. He frequently had no idea what he was supposed to be doing because when he should have been listening to directions, he would be very busy saying, "I know". Being too embarrassed and defensive to admit he really did not understand, he would pretend to be defiant to indicate that he had failed to follow directions by choice. Frequently, during work period he could be found wandering around the room with no purposeful behavior and no idea why he was wandering. Specific emphasis was placed on following directions. Five points were given for each class period during which he refrained from aimless wandering. Careful maintenance of graphs showing actual performance in skill areas and extensive positive reinforcement for accurate self reporting were employed. In May "J" was consistently found working on self-selected activities at fourth grade level in most academic areas.

It could be easy to totally deflate a child like "J" by "making" him realize how "low" his performance level actually was. It was equally easy and much more effective to focus on what skill he had mastered to date, discuss goals of higher levels of skill development, suggest directions in which he could move in order to accomplish the goals set, and provide honest, yet positive, feedback. Thus, the role of the teacher was to facilitate

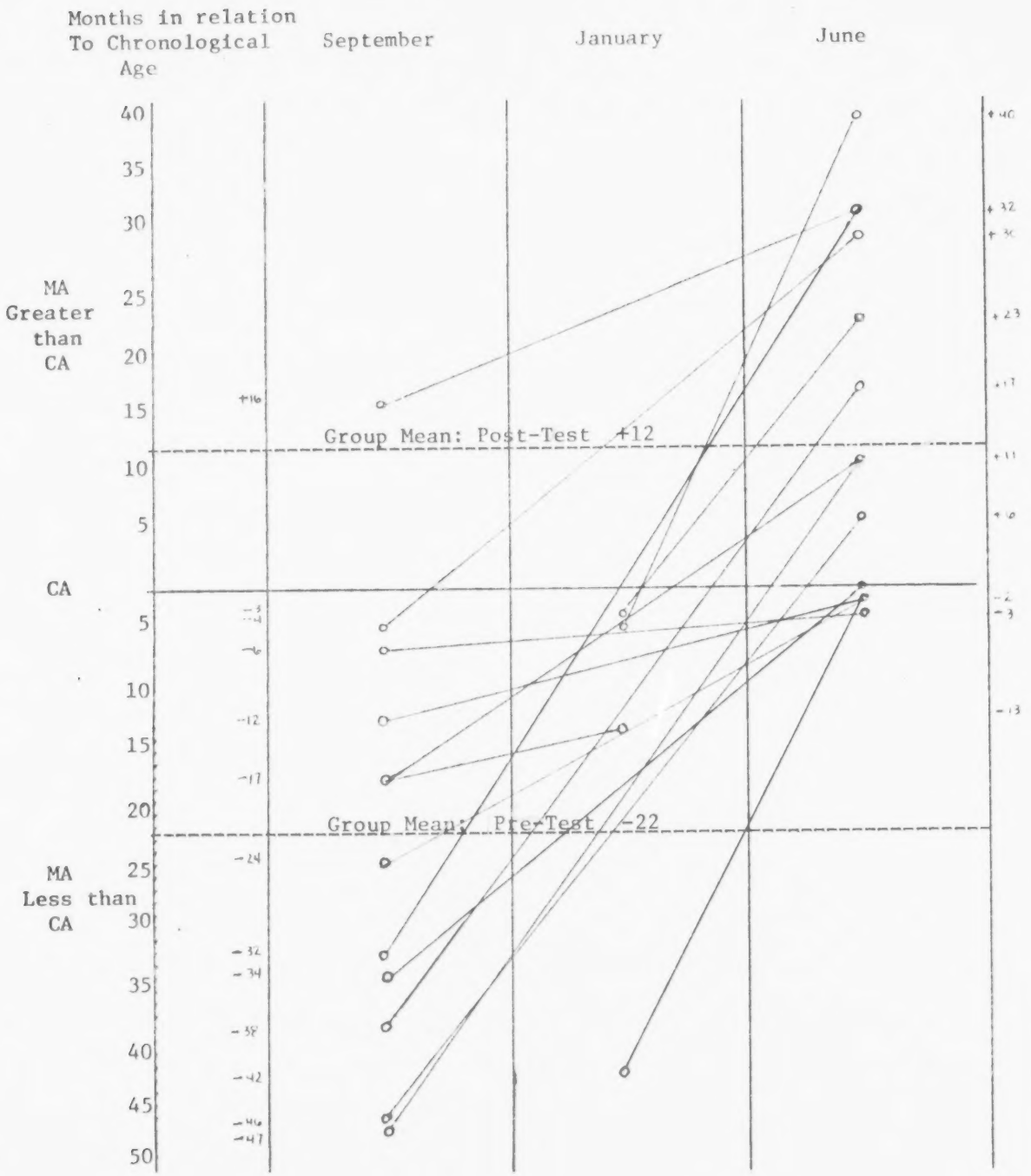
self-understanding, guide in appropriate selection of materials and resources, and provide a structure for positive reinforcement.

Self Awareness:

Self portraits were scored according to the Goodenough rating scale, Measurement of Intelligence by Drawing. Mental ages (M.A.) were then assigned corresponding to the number of points scored. Differences between mental age and chronological age (C.A.) could be fairly compared for only eleven who completed self-portraits in both September and June. The difference was statistically significant at the .001 level. A graph, Figure X, depicts the results. There were eight students who did not do a self-portrait in both months. Of the remaining eight one had a broken arm during the last six weeks of school and was unable to draw in June. In September his drawing was interpreted to be one year and five months below his chronological age and in January nine months below. It may be assumed that his total growth, including the final five month period from January to June, would have been greater than the eight months indicated for September through January. The other seven had difficulty during the pre-testing. Two were unable to produce pictures in September. One student adamantly refused to try. He indicated that he simply could not draw himself. The other repeatedly destroyed his own efforts. The others, consistent with their typical classroom performance, managed to avoid doing the required drawing until January. The first of the boys was nine years and four months old in January while the drawing he did was representative of a child five years and six months. In ~~June, at the age of nine years and eight months~~ January, his drawing was three years and ten months below his chronological age and in June was two months below. Thus, a gain of three years and eight months took place during the six months. The

FIGURE X

DIFFERENCE BETWEEN CHRONOLOGICAL AND MENTAL AGE EQUIVALENTS
USING GOODENOUGH RATING SCALE
FOR SELF PORTRAITS



second boy, aged nine years and three months, drew a portrait representative of a child aged nine years and six months, which was three months above his C.A. in January. In June there was a difference of one year and nine months between his C.A. of nine years and seven months and the M.A. of eleven years and six months represented by his drawing. Thus, he made a gain of one year and six months in the six month period.

One child had such difficulty in perceiving herself as a separate individual that she drew herself as such a tiny person (actually a little scribble) in a many-storied house, outside of which the rest of her family was bar-bequing. Consequently, it was impossible to score her drawing. Her January portrait was representative of a nine year old. Thus, in January her chronological age was eight years and ten months and her mental age was nine years. In June her chronological age was nine years and two months and her mental age was twelve years and six months. She not only drew herself as she looked that day, including the little bear on her blouse, she drew herself thinking about how she looked in her new "granny-gown". Though it is not fair to say twelve years and six months growth in self awareness took place from September to June, her performance changed that much. Certainly the dramatic change in her feelings and awareness of herself were regarded as extremely positive.

The two remaining students were limited by co-ordination difficulties in September and scored zero in both points and mental age. In June, both scored the number of points representing a mental age of four years and six months. It is felt that the awareness each of these students has of himself as a person is far greater than can be reflected by drawing.

Changes in self-portraits were considered to be indications of the awareness each student had of himself and feelings about himself rather than indications of artistic ability. Because no direct instruction in drawing was included as part of Achievement Unlimited, the change obviously was caused

by other factors. Those factors considered to have affected the changes were: 1) heterogeneous grouping which exposed each to the drawings of other students, 2) challenge to put forth their best effort, and 3) opportunities for general art instruction with other members of their regular class. However, no specific instruction for drawing people was given in the regular classroom experience either. Learning to perceive themselves as individuals worthy in their own right was assumed to be the greatest single factor affecting change.

Student Attitude:

In their response to questionnaires completed in June, all nineteen students stated without reservation that they knew they had improved both academically and in their ability to get along with peers and adults. There was agreement that the task sheets allowed them to know exactly what was expected of them and that they liked knowing what was expected. While only sixty-five percent said they actually began working before 8:30 A.M., they agreed that they liked being able to start without having to wait for others. They also agreed they could finish all of their tasks each day if they tried. There was at least ninety-five percent agreement that they 1) liked having different work from everyone else, 2) liked the tasks they had, 3) considered the amount of work expected of them to be fair, 4) worked harder so they were sure to earn choice time, 5) enjoyed receiving points for appropriate behavior, 6) felt the points were fairly given, 7) had friends in the group, and 8) would retain our two rules with no changes. The questions asked on the questionnaire can be found in Appendix E.

Eighty percent preferred working on math, spelling, reading, vocabulary, and writing skills in the experimental morning group rather than in their regular classes. Only sixty percent indicated that they had asked their parents to look at their completed task sheets and even fewer than thirty-five

percent reported that their parents asked them for the task sheets. Answers to questions regarding whether students had learned not to hurt others indicated some concern on the part of the students. Eleven said students in the group had learned not to hurt, seven said only some had learned, and one answered "no", this had not been learned. This was marked improvement from September, however. For eighteen students to see progress in the inner controls of one another and for all nineteen to be concerned about whether or not others were growing indicated desirable, positive growth to the teacher.

Teacher Attitude:

From the standpoint of the teacher, the lowering of tensions in the classroom and the decrease in behavior problems allowed very close interpersonal relationships to be enjoyed and also allowed more time than had formerly been possible to be spent in academic instruction. As the teacher gathered evidence that her interaction with the students was productive, she was encouraged to become increasingly more facilitating and even less authoritarian. As with the students, data indicating success caused the teacher to feel more positive and comfortable in her role.

Parental Attitude:

Even though the parents of each student included in the program knew it was experimental, they had almost no questions regarding their child's participation. This was not considered to be an apathetic response. Each parent had known the project director prior to September and had had his child enrolled in the Laboratory School for at least one year prior to the program. The lack of questions and initial comments by parents was regarded as confidence in the school and comfort with the placement of the child. No parent seemed to be anxious or doubtful as the program began and each was co-operative in 1) attending parent-teacher-student conferences to discuss the student's progress,

2) responding to notes sent home informing them of an activity and requesting their signature as an indication that they had read it, and 3) responding to other school initiated functions. Parents requested conferences occasionally to about the same degree as in other classes.

One parent did express concern in January that too much was being expected of her child. Further, her child was being treated unfairly and was not getting to play when the other students did. These concerns were based on verbal reports by her daughter. After appreciation was expressed to the mother for being honest about her feelings, the mother was invited to observe during the regular work sessions, to view video-tapes, and to review the work folder of her daughter. The mother accepted this invitation and was quite surprised at the capabilities of her daughter, particularly as seen in viewing the video-tape. As a result she became most supportive of the program. Furthermore, she suggested that it was "unfair" to let her daughter just sit and watch others and be unproductive. To allow her to do so might be saying to her that it was felt she was not capable of doing what the others were doing. The mother decided to allow her to be more independent and self-sufficient at home also. Both the parent and child were proud of the accomplishments made at home and school. The child's opinions and ideas began to be valued; thus she received more attention from others in her family for the appropriate things she did, including expressing her ideas. Consequently, she felt less need to get attention in negative ways such as crying or by attempting to shock or concern people with imaginative and exaggerated stories. Academically the child made significantly more progress in April, May, and June than from September through March, the time period prior to resolving her concerns.

In January duplicate task sheets were used so that one sheet could remain as a record in the completed work folder, and one could be sent home to enable the parents to see exactly what was expected and what was achieved by his child

each day. The major purpose for sending the task sheets home was to provide parents with a positive communication about the child's activities on a daily basis. The sheets also insured an opportunity for each parent to be informed regularly about the child's activities. The responsibility of reporting was not left solely to the child. While he had the responsibility for giving the form to his parents, he did not have to enumerate the positive things he had done to gain parental approval. No room was allowed for doubting the report given. Some parents responded in writing and some orally, stating that they appreciated receiving the completed task sheets each day. Since the task sheet had each specific activity that was required, such as the spelling words given, parents knew exactly in which areas their child needed help and felt more competent in helping at home. In response to the questionnaires answered by the students, sixteen (eighty-five percent) said their parents looked at the task sheets, but only nine (forty-seven percent) said their parents asked to see the sheets. One student said, "My parents <u>always</u> ask for my task sheet--everyday--soon as I open the car door." He went on to say, "I don't mind though 'cause it's always good, and it starts the afternoon out right." The same parents also requested a special conference in April and expressed delight at their son's progress. However, they were apprehensive that he might not continue to improve as he had in the first eight months of the program. They wanted assurance that he could continue similar work the next school year and sought ideas for summer activities. As compared with the total group, the gains made by this student represented the second greatest in both spelling and reading vocabulary. In improvement of reading level his gains were fourth. In math he made the seventh greatest gain, and in writing he ranked ninth. Because of the extremely positive feelings of his parents and evidence of significant academic gains, it was suspected that meausres of his self-concept would reflect even greater change than seemingly took place. The Florida Key indicated that his

change represented the fourth greatest improvement, but the validity of this test was questioned as was previously discussed. His self-portrait ranked only ninth in improvement, and his mental age was still two months below his chronological age. On the Ottawa School Behavior Checklist sixteen students decreased more negative behaviors than he did.

There was clear evidence from the data collected that academic progress rapidly increased for most students who had been unsuccessful in school as soon as the student saw himself realistically as a worthy individual capable of learning. We found that as they learned to like themselves, they learned to live more effectively in the school environment. Yet, for some students academic success did not increase at the same time as the positive growth in self-concept. As with the child above, academic gains may be measured before changes in self-concept are measurable. In other instances measured changes in self-concept may precede measured academic progress. However, the two seemed to serve as catalysts for one another with the prerequisite for initial learning being sufficient freedom from tension and fear of failure so to attempt a task. Gains in self-responsibility also tended to enhance skill development.

This positive approach to modifying behavior with immediate feedback extended to many other situations, including the students' homes. Parents reported that students were managing their individual behaviors in more acceptable ways as a result of being aware of specific progress. This frequently involved maintaining graphs at home.

Since students did not have to go through an extensive or expensive initial evaluation procedure in order to attain a label for admission to Achievement Unlimited, long waits prior to working with students were avoided. Students were at equal ease as they began to terminate individual work and participate to a greater extent in other settings. Because no label needed to be attained for, or removed from, a student for him to receive appropriate modification in

his educational experiences, the student, his family, and friends avoided the unnecessary embarrassment and/or ridicule all too frequently associated with labeled handicapped students. The parents did not have to go through a sudden change in view, hopes, or aspirations that were held for their child. Instead, they were enabled to modify their views of their child gradually as they became more realistically aware of his limitations and assets.

Student Helpers:

Each student helper was a volunteer who participated in our program as a regular part of his curricular activities. No student was specifically recruited nor was any student required to continue beyond the point where his participation was mutually satisfying to both the program and to him. Accordingly, seventeen students asked to help in the implementation of our experimental program. Nine students began working in September. Eight additional student helpers began participating later in the year. Those who began later in the year did so primarily on the recommendation of the helpers already involved.

Encouragement to participate as an assistant in the program frequently included a recounting of positive personal experiences or discussions of how much the younger students needed the help and influence of the older students. Early in the year, the student assistants began asking questions and verbalizing observations regarding the students in the program whom they were helping. At times they expressed a real understanding of some of the bizarre behaviors and feelings of the younger students, confiding that they too had similar feelings or had acted in a somewhat similar manner at times. Thus, self-awareness of the helpers increased. As they helped others work through solutions to problems, they began also to find personal solutions. Being with others whose problems were greater seemed to free the helpers to view themselves

more realistically.

Whether it was the supervision of younger students or the assistance with the data for the experimental program, the importance of their work was apparently strongly felt by each student. Even on a day when one of the helpers skipped his other classes, he generally reported as scheduled to work in Achievement Unlimited. The concern the younger students had when the helpers were absent was reflected by cards, notes, pictures, phone calls, and also by a barage of questions upon return. As the members of the experimental group increased skills in open communication and became better able to express their ideas, their comments were clear indications of the positive feelings they had regarding the helpers. Frequently heard were comments such as "I love you." "You're nice." "I'm glad you're here today." "I've really missed you 'cause nobody helps me as good as you do." "Boy, I'm really mad at you for not showing up to help me. I don't think you really had to go with those people yesterday. I think you just wanted to." Although they too had difficulty expressing their feelings, particularly in the presence of peers or adults, the helpers found ways to communicate to the younger students that they and their feelings were important to them. It was also evident by the very twinkle in their eyes that they appreciated the warmth shown them by the children, that it touched them deeply, and that it was highly valued.

"Choice time" came to mean more. Students worked harder to be sure they earned their time when playing a game with an older student or when going for a private walk with one of our helpers was at stake. The older students provided continual encouragement for the children to complete the assigned tasks or to work diligently enough to earn a sufficient number of work points for "choice time". The urging was always done in a positive way with the focus on the goals. Punitive measures were always avoided. Furthermore, the

encouragement was sincere. The helpers actually became disappointed, even depressed, when one of "their" students failed to earn "choice time". They then were able to share the personal frustration and disappointment felt by a teacher when students do not seem to respond to the efforts of help made by the teacher. For many of the helpers this was the first opportunity they had had to view education from "the other side". They commented about how exasperated some of their teachers must have been with them at times and verbalized insight into the behavior of some of their students.

The helpers began to ask questions regarding many of the problems of the younger students. "What is cerebral palsy?" "How does it feel to be in a wheelchair?" "Why do some people have to have things wrong with them?" Some of their questions had to remain unanswered since the project director could not answer questions such as "Why does it have to happen?" However, all questions that could be answered were answered in a straight-forward, objective manner.

Everyone interested, particularly the students with the problems being questioned, openly discussed any area of concern to them. Students and student helpers were seen closing their eyes and trying to walk, blocking their ears and trying to understand people around them, letting their legs dangle as they tried to use a walker, pretending they had difficulty speaking yet trying to make themselves understood, and even trying to read books written in another language. The children with the "real" problems participated in this sincere exploration into the world of others. Consequently, students began to respect one another for the abilities each had and were often fascinated by the skills others had developed in overcoming obstacles. Certainly, all students moved to some degree along the continuum from sympathy toward empathy. It is the opinion of the project director that it is as self-fulfilling to understand as it is to be understood. Hence, all efforts of the students to move in the

direction of understanding others was encouraged and regarded as an extremely positive aspect of Achievement Unlimited.

Peer Attitude:

Because all nineteen students plus the student helpers were participating in regular classes during most of their school day, the understanding each gained was transferred subtly to other areas of the school. Participation in the experimental program also served as a springboard for projects in several secondary classes. Discussions in psychology and human development units were occasionally led by students who had previously failed to become involved in these classes but who had gained confidence, insight, and interest as a result of their work with younger students. When they spoke about the work in which they were engaged, they found others listening to them and respecting their ideas. To the helpers whose opinions had previously been ignored in academic settings, this change in the attitudes of others resulted in increasing their self-confidence and, therefore, served as encouragement for continued work. Indirectly, then, the assistants were also rewarded for appropriate behavior. The approval by peers probably far outweighed the direct approval given by the project director and extended far beyond the experimental setting.

Peer attitude certainly was also important with the younger students. Therefore, it was felt to be of considerable value to Achievement Unlimited that there seemed to be no stigma attached to the nineteen participants. Throughout the year regular classmates of the participants continually requested to join the group, and by December it was necessary to form a similar group with twenty-three participants. While the afternoon group functioned in a similar manner, no data were kept for statistical analysis.

Video-taping:

The video-tapes of Achievement Unlimited have been preserved to date. The children enjoyed seeing themselves and classmates on T.V. In addition, they also had an opportunity to see themselves in action, to see on-task behavior which was desired, and to see how they got into trouble when their behavior was undersirable.

The teacher found that observing the children via the video-tape enabled her to focus on specifics without the pressure of classroom duties and responsibility for the students. It increased awareness and understanding of individual behaviors and was valuable in planning for individual needs.

Cost of the Program:

Like other Florida counties where supplemental budgets for special education are provided above the regular per pupil cost allotment, the budget for special education at the laboratory school is also supplemental to the amount spent on each student as a member of a regular class. A materials budget of $300.00 was divided among 85 students seen on a regular basis throughout the year. Therefore, $3.53 was the per pupil expenditure for the total number of students seen. In addition to the $3.53, graph paper and covers for the task booklets used in this investigation were purchased for a total of $4.39. Thus, the total materials cost per pupil for the nineteen students in the experimental program averaged $3.76.

Additional expenditures for developing film loops and for video-taping totalled $93.45. Two film loops depicting Achievement Unlimited in operation were developed as one means to disseminate information. They were used in consulting with other interested educators, particularly groups, and also in teacher education activities. The loops were available for preliminary viewing in order that only those with additional interests or concerns found

it necessary to be in the classroom with the students while the program was in operation. Still, over 600 individuals did observe during the nine month period. The cost of each cartridge of film was $2.60 and the processing for each was $2.50, resulting in a cost of $5.10 per film loop or $10.20 as the total spent for this purpose. The cost of video-taping was $83.25 for three reels of video-tape at $27.75 per reel. The tape may either be preserved or reused for other purposes.

For administrators concerned with employment and organization of faculty and staff, the total number of pupils successfully managed by each teacher is an important consideration. By effective heterogeneous grouping, one teacher has been employed to work with more students than is generally found in traditional programs in which students are placed in classrooms based on an assigned label; i.e., (Educable Mentally Retarded) EMR. Since considerably more than thirty students have been included in individualized programs under the direction of one teacher at the Laboratory School, it is felt that thirty students could realistically be managed in other school settings. One teacher with the responsibility for two groups (fifteen students per group) could meet daily for a two hour block with each group and still have a scheduled two hour planning period. Thus, with fewer salaried personnel, more students than indicated by state norms could be effectively helped to make significant gains in school settings. Heterogeneous grouping again affects the economics of education when there is no longer a need to transport pupils to schools outside of their normal school districts.

Implementation By Other Schools:

A teacher's guide is being prepared for those public school personnel interested in developing and implementing programs similar to Achievement Unlimited in their schools. The guide will supplement the general description

of the program contained in this monograph. It will delineate, in very specific terms, the mechanics involved in 1) selection of students for whom the program may be beneficial, 2) the process of pinpointing the specific academic and social skills to be modified, 3) developing procedures for recording progress in the selection or designing of appropriate tasks and materials for individual students, and 4) developing individual programs to provide positive reinforcement for desired behaviors. The math skills test and guide for teachers will also be included with information relative to diagnostic procedures. Suggestions for filing work and managing work sheets for optimum individualization are also to be included. Those interested in obtaining copies of the teacher's guide should contact the project director, Mrs. Jean Woodley Brown, or the Laboratory School Director, Dr. J. B. Hodges.

If clarification or additional information relative to any aspect of the program is desired, inquiries will be appreciated. If there are those who would like to discuss the project with the project director or observe the program in action, visitors to the Laboratory School are always welcome.

Appendix A

Materials

The following list of equipment and materials is not all inclusive, but is a representative sample of the materials available for use by the students participating in Achievement Unlimited. Some materials were used by only one student. Others listed were used by many or all students.

Equipment:

6 Work Carrels
1 File Cabinet
1 Stop Watch
5 Kitchen Timers
1 Record Player
1 Cassette Tape Recorder
1 Reel-to-reel Tape Recorder
1 EDL Junior Controlled Reader with Filmstrips
1 EDL Flash-X
1 Hoffman Reader with Records and Filmstrips
8 Earphones adaptable to the record player, tape recorder and Hoffman Reader
1 Punching Bag
1 Adjustable Balance and Walking Board
1 5 x 10 Tumbling Mat

Testing Materials:

Titmus Vision Tester
Tri-tone Audiometer
Wepman Auditory Discrimination Test
Spache Reading Scales
Mills Learning Inventory
Illinois Test of Psycholinguistic Abilities
Frostig Test of Visual Perception
Slosson Tests for Drawing Co-ordination; Oral Reading; and Intelligence
McGraw-Hill Sullivan Programmed Reading Test
Goodenough's Measure of Intelligence by Drawing
Ottawa School Behavior Checklist
Florida Key Inferred Learner Self-Concept

Academic and Perceptual Achievement Materials:

McGraw-Hill Sullivan Programmed Readers
American Education Publications Weekly Reader Practice Books:
- Phonics and Word Power
- Read/Study/Think
- Imagine and Write
- Science Reading Adventures
- Table and Graph Skills
- Map Skills

Distar Reading Program
Webster Classroom Reading Clinic
Follett -- 3140 Important Words
My First Crossword Puzzle Book, Platt and Munk Publishers
Phonics We Use Learning Games Kit
Charles E. Merrill Spirit Masters Diagnostic Workbooks:
1. Nip the Bear
2. Red Deer the Indian Boy

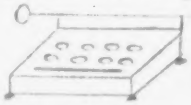
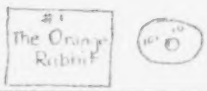
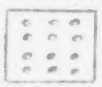
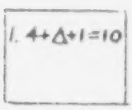
Continental Press Spirit Masters:
- Beginning Sounds, levels 1 & 2
- Reading Thinking Skills, levels 1 & 2

Large (42" x 30") Ideal Pegboard with Cards and Pictures
Playskool Match-ups
Developmental Learning Materials :
- Pre-writing Cards
- Sequencing Cards
- Concept Cards
- Individual (5" x 5" and 10" x 10") Pegboard with Design Cards

Marianne Frostig Developmental Program in Visual Perception
Reading Readiness Workbooks:
- Auditory Discrimination
- Spatial Discrimination
- Visual Discrimination
- Concepts

Kenworthy Educational Service: Silent Teacher for Addition, Subtraction, Multiplication, Division
Flashcards
Puzzles
Blocks, Tiles, and Beads
Art Supplies
Worksheets and Workbooks for following dots, painting and coloring, coloring by number and coding
Individual Worksheets constructed by the teacher for all academic areas -- particularly math and cursive writing

Appendix B

Task Number	Special Time	Sam S. Task Tuesday	Evaluation
1		Type: Writing Skills  My name is Sam Smith. I am a third grader. Mrs Brown is one of my teachers.	✓ Do this again tomorrow
2		Spelling: after✓ went✓ yellow✓ booklet✓ order window✓ -Graph-	5/6 correct
3	9:00 AM	Hoffman Reader:  (with George)	✓
4		Phonics and Word Power: pg 17	✓ Ver
5		Small Motor Skills  Pegboard Design 7-3 (at standing table)	✓ Task done Go on to 7-4 tomorrow
6		Math (12 problems)  Do Worksheet -Graph-	✓ 11/12 correct Go to next step
7		Gross Motor Skills Throw the net ball to Jim.	✓ Continue this activity -Try to work into a continuous play
8		Sullivan (10 minutes) pages 23—29 (with a teacher)	✓ 7 pages read in 10 min — 0 errors

This is a sample task sheet for Sam Smith. Each day his task sheet is different. No other student's task sheet is identical. This student is capable of reading so few pictures are needed.

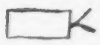
Appendix C

Daily Work Points for Sam Smith
(Student's Name)

Date	Day of the week	Points for doing what I should be doing.	Name of Person Giving Points
3-20-72	Monday	13	Mrs Brown teacher
3-21-72	Tuesday	12	Miss Jake - intern -
3-22-72	Wednesday	13	Susan Sale
3-23-72	Thursday	11	Mrs Brown - teacher -
3-24-72	Friday	12	John Doe

This is a sample of an individual point sheet for Sam Smith. It shows the points he received for exhibiting approporiate behavior during work periods. The total of work points possible for him to receive each day was 13.

Appendix D

Date	Day	8:30 Ready to Work on Time 5	Have Work Tools 2	Check In 1	Did Job 2	 Special Points 5	Work Points 13	Total
3-20-72	Mon	5	2	1	2	5	13	28
3-21-72	Tues	5	0	1	2	5	12	26
3-22-72	Wed	5	2	1	2	5	13	28
3-23-72	Thurs	0	2	0	0	5	11	18
3-24-72	Fri	5	0	1	2	5	12	25
3-27-72	Mon							

This is a sample general point sheet for Sam Smith. It shows the total points he earned for each day.

Appendix E

The following lists include the questions included on the student questionnaires completed by each participant in the program. The number in the right hand column indicates the number of students who answered the question with the response desired by the teacher.

Two forms were given to each student in order for responses to be checked for consistency. Questions from both forms are listed below:

Questionnaire: Form A

1.	Does your task sheet help you know what you are to do each day?	19
2.	Do you like being able to start to work when you want to (without waiting on the whole group to get ready)?	18
3.	Do you ever start to work before you have to (before 8:30)?	12
4.	Are you glad your work is different from everyone else's?	19
5.	Is the amount of work you are expected to do fair?	18
6.	Do you think you have learned anything in the morning group?	19
7.	Do you like to do your spelling, math, reading, vocabulary, and writing in morning group more than in your regular class?	15
8.	Are your tasks too easy?	13
9.	Do your parents look at your task sheet?	16
10.	Do you like to do something with a teacher or helper during choice time?	NA*
11.	Do you like being able to earn choice time?	19
12.	Do you usually have something you want to do for choice time?	18
13.	Do you usually earn your choice time?	19
14.	Do you like to work on a project or play by yourself during choice time?	NA*
15.	Do you like to receive points for working well?	19

* There was no preferred answer to this question.

16.	Does getting points help you remember what you are supposed to do?	14
17.	Do you like for your points to be displayed so that everyone can see them?	13
18.	Are the helpers fair when they give points?	18
19.	Is Mrs. Brown fair when she gives points?	19
20.	Did it bother you to be part of an experimental group?	18
21.	If your friend wanted to know whether to be part of our morning group would you say yes?	15
22.	Are all of our rules fair?	18
23.	Do you have any friends in our morning group?	18
24.	Are most of the people in our class kind to each other?	7
25.	Are you afraid of anyone in our room?	15

Questionnaire: Form B

1.	Do you like having your tasks on one sheet so you know what to do each day?	19
2.	Do you like not having to wait on others to start or finish their work?	16
3.	Do you wish everyone had the same work to do?	18
4.	Can you finish all of your work if you really try?	18
5.	Do you like the tasks you have?	18
6.	Would you rather work on math and spelling only in your regular class?	17
7.	Are your tasks too hard?	17
8.	Do your parents ask to see your task sheet?	9
9.	Do you ask your parents to look at your task sheet?	17
10.	Do you feel proud when you earn choice time?	16
11.	Do you think choice time is boring?	18
12.	Do you work harder to get to be on choice time?	18

13.	When you earn choice time would you rather play or work on a project with other people than to be alone?	NA*
14.	Do you work harder to receive points?	15
15.	Have you shown your points to anyone?	14
16.	Do you think the points are fair?	19
17.	Did you enjoy giving points?	18
18.	Are you glad you were part of the experimental group?	19
19.	Are you sorry you were part of our morning group?	18
20.	Would you like to change our rules?	17
21.	Do you like most of the people in the room?	18
22.	Have the people in our group learned not to hurt others on purpose?	18
23.	Is there anyone in our group you would like to see get in trouble?	14

* There was no preferred answer to this question.

Appendix F
Tables of Raw Data

Student Number	Spelling Dolch: Basic 100			Reading Vocabulary Dolch: Basic 100			Reading Level Sullivan Programmed Reading Placement Test (McGraw-Hill)		
	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
1	14	75	+61	92	100	+ 8	3	18	+15
2	2	26	+24	7	42	+35	0	PR	+ 1
3	1	63	+62	38	92	+54	1	3	+ 2
4	89	98	+ 9	91	100	+ 9	5	18	+13
5	66	82	+16	69	96	+33	2	10	+ 8
6	2	39	+37	22	67	+47	1	3	+ 2
7	0	38	+38	9	52	+43	PR	1	+ 1
8	15	31	+16	21	65	+44	PR	2	+ 2
9	6	63	+57	35	91	+56	PR-	9	+ 9
10	3	49	+46	19	90	+71	PR	5	+ 5
11	9	96	+87	54	92	+38	PR	6	+ 6
12	88	100	+12	79	100	+21	11	10	- 1
13	1	33	+32	0	41	+41	0	PR	+ 1
14	6	38	+32	13	52	+39	PR	10	+10
15	79	97	+18	82	100	+18	8	14	+ 6
16	24	92	+68	25	98	+73	1	10	+ 9
17	0	53	+53	3	79	+76	0	1	+ 2
18	79	89	+10	89	100	+21	4	13	+ 9
19	95	100	+ 5	99	100	+ 1	7	16	+ 9

Student Number	Math Skills Individual test for specific math skill mastery: Number correct			Alphabet Number of Letters Written in Correct Order			Cursive Writing (Visual Recognition) Cursive letter written from recall - printed letter given		
	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
1	285	359	+ 74	22	25	+ 3	0	25	+25
2	10	106	+ 96	1	26	+25	0	1	+ 1
3	192	282	+ 90	26	26	0	2	20	+18
4	307	415	+108	24	26	+ 2	2	17	+15
5	257	390	+133	26	26	0	5	23	+18
6	207	345	+138	26	26	0	X	X	
7	60	225	+165	3	26	+23	0	16	+16
8	54	283	+229	13	24	+11	1	10	+ 9
9	205	276	+ 71	24	26	+ 2	0	5	+ 5
10	237	333	+ 96	22	26	+ 4	9	23	+14
11	208	356	+148	24	26	+ 2	1	20	+19
12	266	359	+ 93	26	26	0	19	26	+ 7
13	16	134	+118	3	26	+23	0	5	+ 5
14	60	228	+168	22	26	+ 3	0	11	+11
15	271	384	+113	26	26	0	17	24	+ 7
16	192	312	+120	26	26	0	2	15	+13
17	248	280	+ 32	23	25	+ 2	0	5	+ 5
18	262	325	+ 63	26	26	0	11	23	+12
19	323	445	+122	26	26	0	5	25	+20

Writing: Letter Formation
(Auditory Recognition)

Student Number	Lower Case Printing			Upper Case Printing			Lower Case Cursive			Upper Case Cursive		
	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff	Pre	Post	Diff
1	14	22	+ 8	19	23	+ 4	1	25	+24	0	0	0
2	0	9	+ 9	0	19	+19	0	0	0	0	0	0
3	11	23	+12	10	22	+12	0	17	+17	0	3	+ 3
4	23	24	+ 1	19	24	+ 5	2	15	+13	1	10	+ 9
5	20	26	+ 6	21	25	+ 4	15	24	+ 9	3	18	+15
6	14	26	+12	20	26	+ 6						
7	2	17	+15	3	18	+15	0	12	+12	0	2	+ 2
8	17	23	+ 6	6	24	+18	2	9	+ 7	0	1	+ 1
9	7	25	+18	0	26	+26	0	10	+10	0	0	0
10	17	26	+ 9	7	24	+17	9	23	+14	2	16	+14
11	5	26	+21	5	23	+18	1	16	+15	0	6	+ 6
12	23	26	+ 3	16	26	+10	21	26	+ 5	16	26	+10
13	1	20	+19	2	22	+20	0	0	0	0	0	0
14	7	23	+16	0	22	+22	0	7	+ 7	0	0	
15	24	26	+ 2	25	26	+ 1	17	24	+ 7	5	20	+1
16	23	26	+ 3	10	19	+ 9	0	16	+16	0	2	+
17	19	25	+ 6	22	24	+ 2	0	6	+ 6	0	0	
18	24	26	+ 2	22	25	+ 3	11	24	+13	8	20	+12
19	23	25	+ 2	25	24	+ 1	5	24	+19	7	24	+14

Student Number	Florida Key Inferred Learner Self-Concept Number of points awarded			Ottawa School Behavior Checklist Number of Negative Behaviors Observed		
	Pre	Post	Diff	Pre	Post	Diff
1	50	59	+ 9	32	28	- 4
2	83	71	-12	34	17	-17
3	65	73	+ 8	34	21	-13
4	71	66	- 5	33	16	-17
5	77	78	+ 1	34	19	-15
6	62	73	+11	29	18	- 9
7	53	62	+ 9	41	18	-21
8	31	67	+36	42	30	-12
9	33	57	+24	57	22	-35
10	40	62	+22	20	7	-13
11	42	58	+16	37	9	-28
12	64	54	-10	40	28	-12
13	43	36	- 7	58	39	-19
14	24	58	+34	46	17	-19
15	44	74	+30	22	9	-13
16	49	73	+24	12	2	-10
17	35	59	+24	20	10	-10
18	53	65	+22	33	21	-12
19	--	76	---	4	0	- 4

Comparison of Difference Between Chronological and Mental Age Equivalents of Self Portraits From Pre- to Post-Testing

Student Number	Pre Test CA (in years -months)	Pre Test MA (in years -months)	Post Test CA (in years - months)	Post Test MA (in years - months)	Difference Between The Pre and Post MA (in years - months)
1	8-9	destroyed work	9-5	5-6	+ 4-10*
2	8-7	0	9-3	4-6	+ 3-10*
3	9-4	5-6	9-8	9-6	+ 3-10*
4	8-10	6-0	9-6	9-6	+ 2-10
5	10-4	10-0	11-0	13-6	+ 2-2
6	8-10	0	9-6	4-6	+ 4-4*
7	8-6	9-0	9-2	12-6	+ 3-0
8	9-2	10-6	9-10	12-6	+ 1-4
9	7-11	6-6	8-7	9-6	+ 2-4
10	9-0	7-0	9-8	9-6	+ 1-10
11	9-2	6-6	9-10	12-6	+ 5-4
12	9-5	5-6	10-1	11-6	+ 5-4
13	7-11	4-9	8-7	9-6	+ 4-1
14	8-2	refused	8-10	12-6	+12-6*
15	9-11	8-6	10-7	9-6	+ 0-4*
16	9-0	8-0	9-8	9-6	+ 0-10
17	8-1	7-6	8-9	8-6	+ 0-4
18	9-3	9-6	9-7	11-6	+ 1-8*
19	10-4	6-6	11-0	11-6	+ 4-4

*The gain for this student was not included in the statistical analysis because of an irregularity in testing.